

Application No. 10/021,080
Response Dated 07/29/2005
Reply to Office Action of 04/01/2005

PATENT

Agent's Docket No. 11922-US

1. (amended) A network management and service provisioning environment comprising a framework for a network management and service provisioning system, the framework comprising including:
 - ~~a. an implementation of a single managed entity object class, the single managed entity object class being run-time derivable via type derivation into a hierarchy of managed entity object types minimizing the need to re-code and re-compile framework software application code in support of new managed entity object types;~~
 - a. a registry for run-time registration of at least one plug-in brokering access to network management and service provisioning enabling technologies, the plug-in having an associated lexical analyzer stub;
 - b. a parser for processing at least one self-contained managed data network entity specification;
 - ~~d.c.~~ an implementation of a single managed entity object class, the single managed entity object class being run-time derivable via type derivation into a hierarchy of managed data network object types based on a first parsed directive;
 - ~~e.d.~~ a generic lexical analyzer interpreting augmented with the lexical analyzer stub, the augmented lexical analyzer processing an t-least one enabling technology specific second directive; and
 - ~~g.e.~~ an interpreter for processing messages received from at least one network management and service provisioning software application, the message including a third directive employed to invoke at least one method of a corresponding managed data network object instance;

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whereina separation is ~~bening~~ achieved between managed entities, enabling technologies and software applications, the separation enabling independent development, maintenance and troubleshooting of in providing network management and service provisioning deployments solutions minimizing the need to re-code and re-compile framework code in support of new managed entity object types.

2. (amended) A framework as claimed in claim 1, wherein the single managed object class is an abstract managed entity object class.
3. (amended) A framework as claimed in claim 1, wherein ~~the a derived ation of the managed entity data network~~ object type ~~hierarchy~~ includes the specification of at least one attribute.
4. (amended) A framework as claimed in claim 1, wherein the at least one self contained managed data network entity specification includes a human readable file.
5. (amended) A framework as claimed in claim 4, wherein the human readable file is an attribute file holding attributes corresponding to a single managed entity object type.
6. (amended) A framework as claimed in claim 1, wherein the ~~at least one~~ first directive includes an attribute specification.
7. (amended) A framework as claimed in claim 6, wherein the attribute specification further specifies managed entity object type inheritance.
8. (amended) A framework as claimed in claim 1, wherein the network management and service provisioning enabling technologies include support for at least one of a persistence method and a persistence entity.

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9. (amended) A framework as claimed in claim 1, wherein the ~~at least one second~~ directive further specifies a command sequence to be followed in using a specific registered enabling technology.
10. (cancelled) ~~as claimed in claim 9, wherein the framework further comprises at least one registered enabling technology specific lexical analyzer stub for interpreting at least one enabling technology specific directive.~~
11. (amended) A network management and service provisioning apparatus ~~implementing~~ comprising the network management and service provisioning ~~environment~~ framework claimed in claim 1.
12. (amended) A method of ~~providing~~ effecting a network management and service provisioning ~~solution~~ the method comprising steps of:
 - ~~a. registering with a framework at least one plug-in brokering access to at least one network management and service provisioning enabling technology;~~
 - b.a. parsing at least one managed data network entity specification loaded by the framework;
 - b. deriving a single managed entity object class into a managed entity object type hierarchy of at least one managed data network object type via type derivation in accordance with a first directive parsed from the managed data network entity specification;
 - c. registering with a network management and service provisioning framework at least one plug-in brokering access to at least one network management and service provisioning enabling technology;

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- d. augmenting a generic lexical analyzer with the lexical analyzer stub, the augmented lexical analyzer processing an enabling technology specific second parsed directive; and
- d.e. processing at least one message received by the framework from at least one network management and service provisioning software application, the message including a third directive employed to invoke at least one operation of a corresponding managed data network object instance;
- wherein the framework acting [[s]]-as an enabler by separating managed data network entities, enabling technologies and software applications, as well acting as a facilitator therebetween in providing the network management and service provisioning solution while minimizing the need to re-code and re-compile code in support of new managed entity object types.
13. (amended) A method as claimed in claim 12, wherein processing the at least one message received by the framework, the method comprises a further step of deriving a containment hierarchy of managed entity-data network object type instances corresponding to field installed data network equipment.
14. (amended) A method as claimed in claim 12, wherein registering ~~with the framework~~ at least one plug-in, the method further comprises a step of run-time registering the at least one plug-in.
15. (original) A method as claimed in claim 14, wherein run-time registering the at least one plug-in, the method further comprises a prior step of: selecting the at least one plug-in for registration thereof.

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16. (amended) A method as claimed in claim 12, wherein prior to parsing the at least one managed data network entity specification loaded by the framework, the method further comprises a step of: run-time loading the at least one managed data network entity specification.
17. (original) A method as claimed in claim 16, wherein run-time loading the at least one managed data network entity specification, the method further comprises a prior step of: selecting the at least one managed data network entity specification.
18. (amended) A method as claimed in claim 12, wherein parsing, the method further comprises a step of: extracting at least one directive ~~therefrom~~ the at least one managed data network entity specification, the at least one managed data network entity specification being associated with at least one managed entity object type.
19. (original) A method as claimed in claim 12, wherein deriving a the single managed entity object class via type derivation, the method further comprises a step of setting at least one attribute.
20. (original) A method as claimed in claim 12, wherein prior to processing the at least one message received by the framework from the at least one software application, the method further comprises a step of: registering the at least one software application with the framework.
21. (cancelled) ~~A method as claimed in claim 12, wherein processing the at least one message received by the framework; the method further comprises a step of: implementing a directive specified in the at least one managed data network entity specification using a lexical analyzer stub associated with the at least one plug-in.~~

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22. (amended) A method as claimed in claim ~~12-21~~, wherein implementing the third directive, the method further comprises a step of: instantiating managed entity object types.
23. (amended) A method as claimed in claim 21, wherein implementing the one of the second and the third directive the method further comprises a step of: effecting a change in a network state of a managed data transport network in a realm of management.
24. (original) A method as claimed in claim 12, wherein subsequent to processing the at least one message received by the framework; the method further comprises a step of: sending a message to the software application.